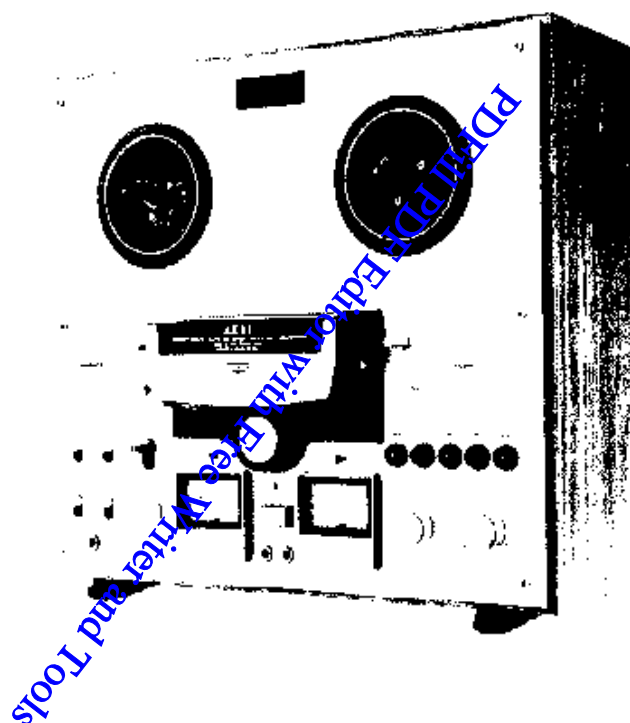


Akai GX-265D Service Manual



STEREO TAPE DECK

MODEL GX-265D

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SECTION I

SERVICE MANUAL

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL OPERATING PRINCIPLES AND ADJUSTMENTS.

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I. SPECIFICATIONS

All (dB) values in a figure indicates the minimum guaranteed performance.

TRACK SYSTEM	4 track 2 channel stereo/monaural system
TAPE SPEED	1 1/2 and 1 3/4 ips ± 1%
	9.5 cm/sec ± 0.05%
	7.62 cm/sec ± 0.05%
NOISE AND FILTER	Less than 0.005% W RMS at 7 1/2 ips
	Less than 0.005% W RMS at 3 3/4 ips
	Less than 0.1% RMS at 7 1/2 ips ± 0.1% RMS
	Less than 0.1% RMS at 3 3/4 ips ± 0.1% RMS
TOTAL NOISE AND FILTER	Less than 0.1% at 7 1/2 ips ± 0.1% RMS
	Less than 0.1% at 3 3/4 ips ± 0.1% RMS
FREQUENCY RESPONSE	20 to 20,000 Hz ± 3 dB at 7 1/2 ips
	20 to 20,000 Hz ± 3 dB at 3 3/4 ips
	20 to 20,000 Hz ± 3 dB at 9.5 cm/sec
	20 to 20,000 Hz ± 3 dB at 7.62 cm/sec
HARMONIC DISTORTION	Less than 0.1%
OUTPUT HARMONIC DISTORTION	Less than 0.1% at 7 1/2 ips
	Less than 0.1% at 3 3/4 ips
SIGNAL TO NOISE RATIO	Better than 40 dB
TOTAL SIGNAL TO NOISE RATIO	Better than 40 dB
OUTPUT	LINE: 200 mV ± 10% at 100 kHz, 100 kHz, 100 kHz, 100 kHz
	PHONO: 200 mV ± 10% at 100 kHz, 100 kHz, 100 kHz, 100 kHz
INPUT	MP: 200 mV ± 10% at 100 kHz, 100 kHz, 100 kHz, 100 kHz
	LINE: 200 mV ± 10% at 100 kHz, 100 kHz, 100 kHz, 100 kHz
	PHONO: 200 mV ± 10% at 100 kHz, 100 kHz, 100 kHz, 100 kHz
RECORDING/PLAYBACK LEVEL	At 7 1/2 ips, output (Recording Volume at maximum)
	At 3 3/4 ips, output (Recording Volume at maximum)
CROSS TALK	Better than 40 dB, stereo
	Better than 55 dB, monaural
FLASE RATIO	Better than 10 dB
BIAS FREQUENCY	400 Hz ± 5%
BIAS LEAK	Better than 40 dB
HIGH FREQUENCY DISTORTION	Between 10 kHz playback channels: within 3 dB
	Between 10 kHz playback channels: within 4 dB
	Between 10 kHz and 10 kHz: within 3.5 dB
	At playback rate: 100 Hz, 3 3/4 ips pre-emphasized test tape at 3 1/2 ips
RECORDING TIME	At maximum recording rate at 3 3/4 ips, using a 1,800 ft tape
REWIND AND FFW TIME	Approximately 120 sec at 50 Hz, using a 1,800 ft tape
MOTOR	MAIN MOTOR
	TYPE: 5CM2-2400-4 pulley
	Resolution: 615 rpm at 7 1/2 ips ± 1.9 cm/sec
	500 rpm at 3 3/4 ips ± 0.5 cm/sec
	REWIND MOTOR
	TYPE: 2400-MH
	Resolution: 930 rpm at 50 Hz
	1,120 rpm at 60 Hz

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HEAD	RECORDING/ERASE COMBINATION HEAD	Type: RE-40 Gap: REC HEAD: 4 microns ERASE HEAD: 0.000 gap Impedance: REC HEAD: 1.4kΩ ohm 25°C at 100 kHz ERASE HEAD: 130 ohm 50°C at 100 kHz Ill. Resistance: REC HEAD: 5.5 ohm ERASE HEAD: 1.8 ohm
	PLAYBACK HEAD	Type: P6-202 Gap: 1.7 ± 0.5 microns Impedance: 1.4kΩ ohm at 1 kHz Ill. Resistance: 268 ohm 5 to 6 sec. at 7-1/2 ips (maximum interval)
REVERSING TIME TRANSISTOR		7SA564Q(R) ... 1 2SC4591(40°C) ... 1 2SC9451P(100MHz) ... 1 2SC9451A(100MHz) ... 1 2SC4211(40°C) ... 2 2SC4591(40°C) ... 1 11PM ... 1
DIODE		1N34A ... 2 1N4004 ... 4 1N4003 ... 1 1S158 ... 1 1S242 ... 1 1S2413VF ... 6 1002 ... 4 1004 ... 1 RDS-AM ... 1
POWER REQUIREMENTS AND CONSUMPTION		100W 240V AC 50/60 Hz, 90W (Universal model) 100W 240V 50 Hz, 90W (HSI Models) 100W AC 50 Hz, 90W (CEE Models) 100W AC 60 Hz, 90W (CSE Models) 100W AC 100/60 Hz, 60/65W (JPN Models)
DIMENSIONS		440W x 204H x 204D mm 17 3/8" x 8 1/8" x 8 1/8"
WEIGHT		16.6 kg (36.5 lbs) Dimensions include all protruding parts.

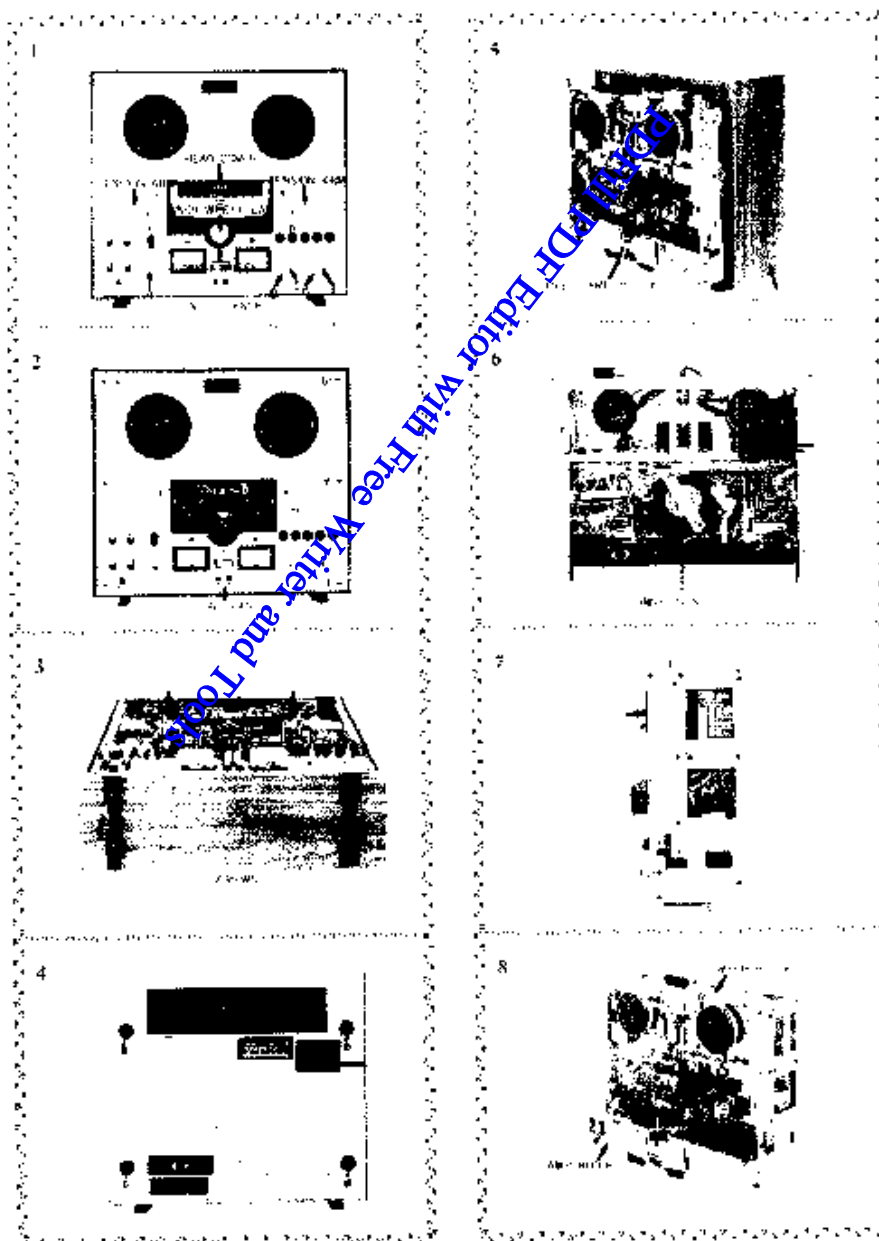
NOTE: 1. Specifications determined with SCOTCH-211 tape unless otherwise noted.
2. Specifications subject to change without notice.

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II. DISMANTLING OF UNIT

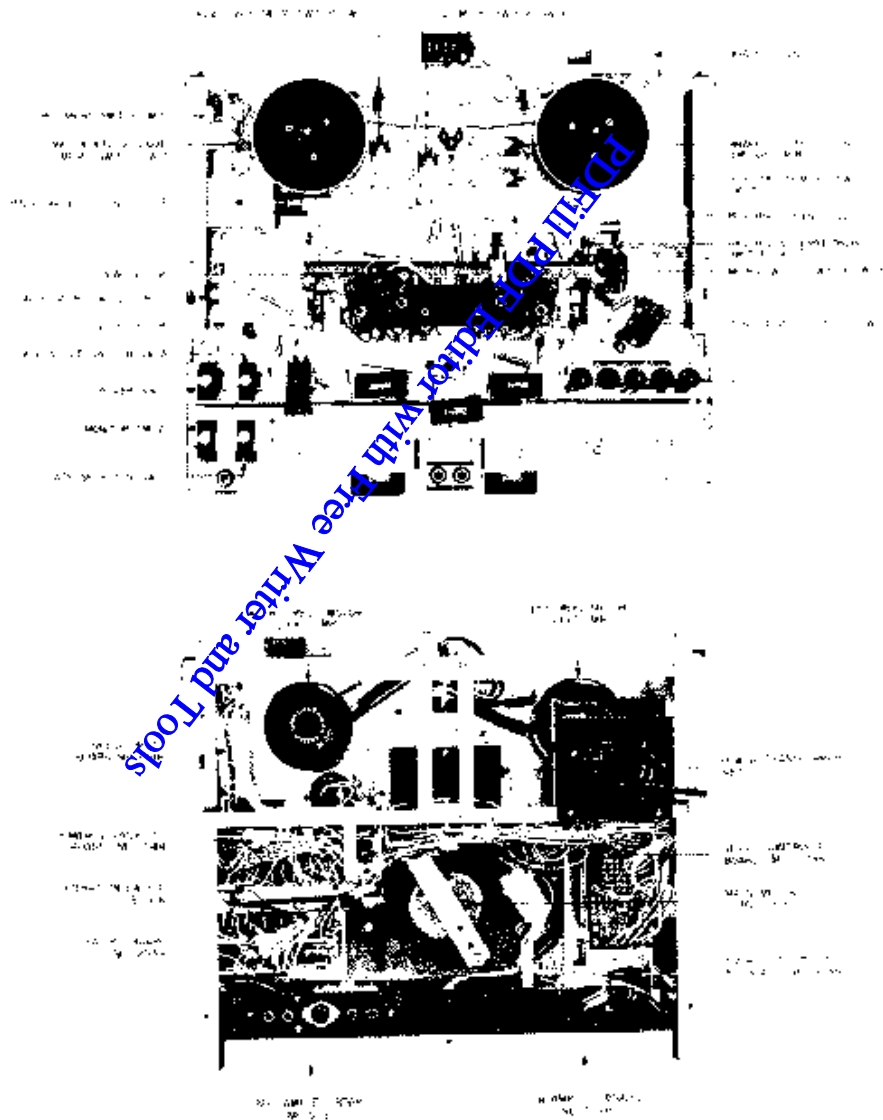
In case of trouble etc. necessary repair/assemble, please disassemble in the order shown in photographs. Reassemble in reverse order.



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III. ARRANGMENT OF PRINCIPAL PARTS



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IV. MECHANISM ADJUSTMENT

REC. MICRO SWITCH
SW-5

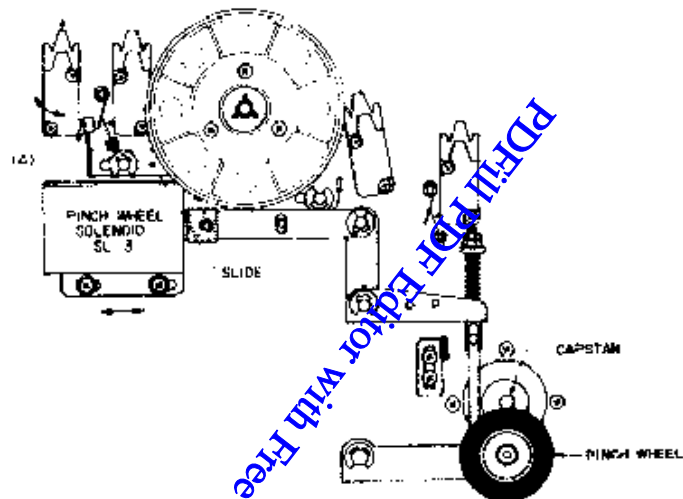


Fig. 1

PINCH WHEEL PRESSURE
ADJUSTMENT NUT
1.3 to 1.4 kg

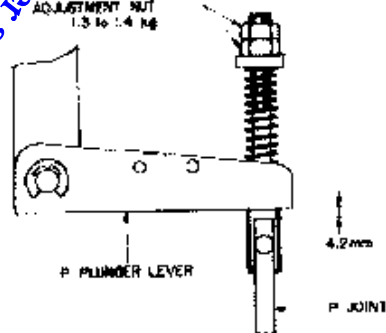


Fig. 2

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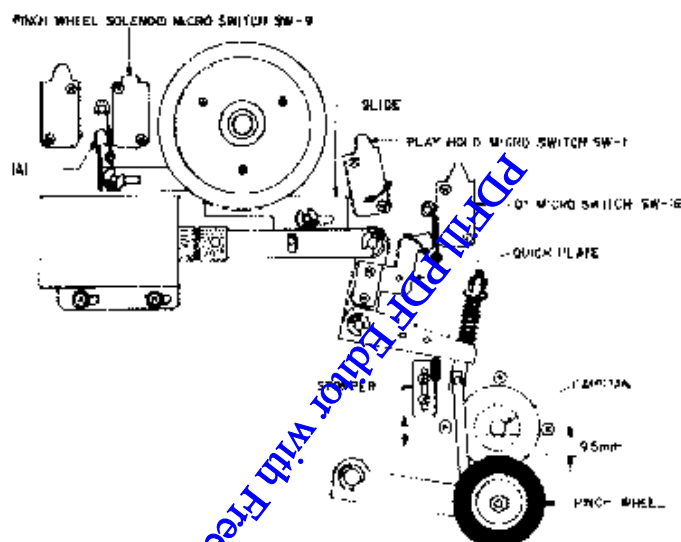


Fig. 1

1. POSITION ADJUSTMENT OF PINCH WHEEL SOLENOID SW-9 (Refer to Fig. 1)

- 1) Remove head block.
- 2) Insert a 4.7 mm (edge to U type washer used between the P. Finger Lever and P. Joint (Refer to Fig. 2).
- 3) Set the deck in playback mode and fix Pinch Wheel Solenoid at position at which the pinch wheel begins to rotate.

2. PINCH WHEEL POSITION ADJUSTMENT AT STOP MODE (Refer to Fig. 3)

- 1) Remove head block.
- 2) Adjust Stopper so that the clearance between Pinch Wheel and Capstan Shaft is 9.5 mm.

3. PINCH WHEEL PRESSURE ADJUSTMENT (Refer to Fig. 2)

Adjust Pinch Wheel Pressure Adjustment Nut so that pinch wheel pressure is 1.3 to 1.4 kg.

4. POSITION ADJUSTMENT OF PLAY HOLD MICROSWITCH SW-11 (Refer to Fig. 3)

Adjust Play Hold Microswitch position so that at stop mode, the Play Hold Microswitch operates properly and the Slide does not contact the body of the microswitch.

5. SLIDE ADJUSTMENT (Refer to Fig. 3)

Adjust part (A) of the Slide so that at stop mode, the Pinch Wheel Solenoid Microswitch operates properly and part (A) does not strongly hit against the body of the microswitch.

6. POSITION ADJUSTMENT OF QUICK PLATE (Refer to Fig. 3)

Adjust Quick Plate position so that at stop mode, the Quick Tongue Microswitch operates properly, and the Quick Plate does not strongly hit against the body of the microswitch.

7. POSITION ADJUSTMENT OF RECORDING MICROSWITCH SW-5 (Refer to Fig. 1)

Adjust part (A) of the Slide so that at playback mode, the Recording Microswitch operates properly, and part (A) does not contact the body of the microswitch.

← ↑ →



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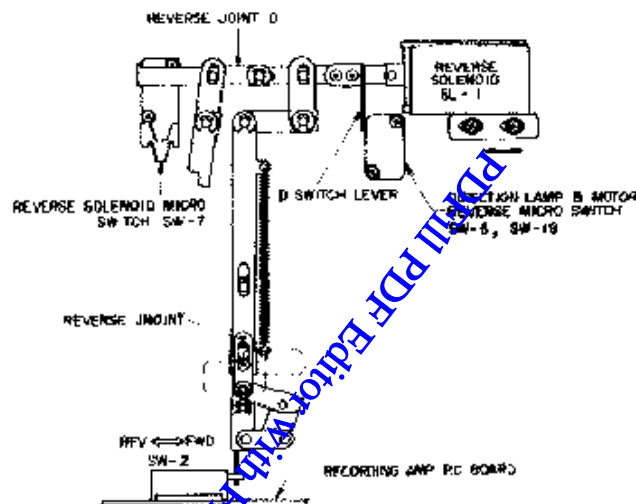


Fig. 6

8. POSITION ADJUSTMENT OF BRAKE SOLENOID SL-7 (Refer to Fig. 4)

Set the deck to playback mode, and fix Brake Solenoid at position at which the left and right brake levers display 180° angle relation.

9. POSITION ADJUSTMENT OF BRAKE SOLENOID MICROSWITCH SW-8 (Refer to Fig. 4)

Set the deck to playback mode, and adjust Brake Solenoid Microswitch position so that the microswitch operates properly.

10. BRAKE TENSION ADJUSTMENT (Refer to Fig. 4)

Adjust Spring Snapper position so that the brake tension is 350 to 400g.

11. PAUSE ADJUSTMENT (Refer to Fig. 5)

- 1) At playback mode, lock Pause Lever.
- 2) Adjust Pause Lock Plate position to obtain a 0.3 to 0.5 mm clearance between Pinch Wheel and Capstan.
- 3) When making this adjustment, be careful that the clearance between Pinch Wheel and Capstan does not exceed 0.5 mm.
- 4) Confirm that the Quick Tension Microswitch is pushed when the Pause Lever is depressed and if not, adjust with QT Lever B.

12. POSITION ADJUSTMENT OF REVERSE SOLENOID SL-1 (Refer to Fig. 6)

- 1) Set the deck to reverse mode, and adjust Reverse Solenoid position so that Reverse Joint D activates the Reverse Solenoid Microswitch.
- 2) At this time, be careful that Reverse Joint D does not contact the body of the microswitch.

13. D SWITCH LEVER ADJUSTMENT (Refer to Fig. 6)

Set the deck to reverse mode, and adjust D Switch Lever so that the lever activates the Direction Indicator Lamp and Reel Motor Torque Conversion Microswitches.

14. INSTALLATION POSITION ADJUSTMENT OF REVERSE JOINT (Refer to Fig. 6)

Adjust Reverse Joint installation position so that when the deck is set to reverse mode, FWD ↔ REV Slide Switch of Recording Amp PC Board (N3: 5037) is completely depressed.

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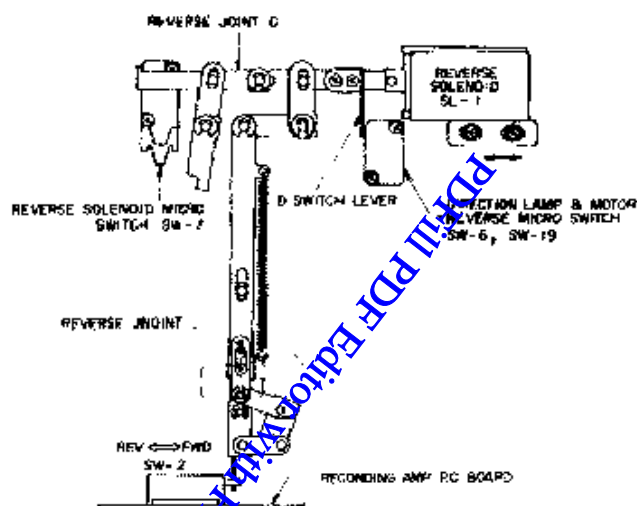


Fig. 5

8. POSITION ADJUSTMENT OF BRAKE SOLENOID SW-2 (Refer to Fig. 4)

Set the deck to playback mode, and fix Brake Solenoid at position at which the left and right brake levers display 180° angle relatively.

9. POSITION ADJUSTMENT OF BRAKE SOLENOID MICROSWITCH SW-8 (Refer to Fig. 4)

Set the deck to playback mode, and adjust Brake Solenoid Microswitch position so that the microswitch operates properly.

10. BRAKE TENSION ADJUSTMENT (Refer to Fig. 4)

Adjust Spring Snapper position so that the brake tension is 350 to 400g.

11. PAUSE ADJUSTMENT (Refer to Fig. 5)

- 1) At playback mode, lock Pause Lever.
- 2) Adjust Pause Lock Plate position to obtain a 0.3 to 0.5 mm clearance between Pinch Wheel and Capstan.
- 3) When making this adjustment, be careful that the clearance between Pinch Wheel and Capstan does not exceed 0.5 mm.
- 4) Confirm that the Quick Tension Microswitch is pushed when the Pause Lever is depressed and if not, adjust with Q/T Lever B.

12. POSITION ADJUSTMENT OF REVERSE SOLENOID SL-1 (Refer to Fig. 6)

- 1) Set the deck to reverse mode, and adjust Reverse Solenoid position so that Reverse Joint D activates the Reverse Solenoid Microswitch.
- 2) At this time, be careful that Reverse Joint D does not contact the body of the microswitch.

13. D SWITCH LEVER ADJUSTMENT (Refer to Fig. 6)

Set the deck to reverse mode, and adjust D Switch Lever so that the lever actuates the Direction Indicator Lamp and Reel Motor Torque Conversion Microswitches.

14. INSTALLATION POSITION ADJUSTMENT OF REVERSE JOINT (Refer to Fig. 6)

Adjust Reverse Joint installation position so that when the deck is set to reverse mode (FWD → REV Slide Switch of Recording Amp PC Board INL 5037) is completely depressed.

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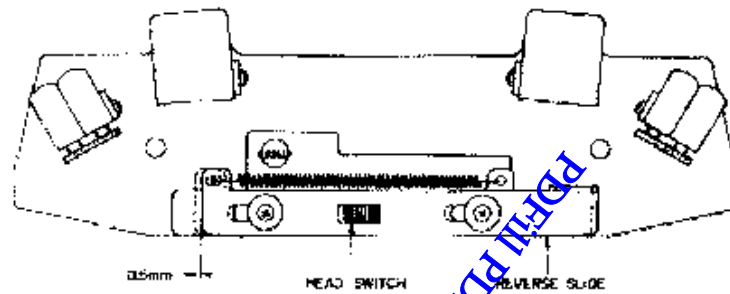


Fig. 7

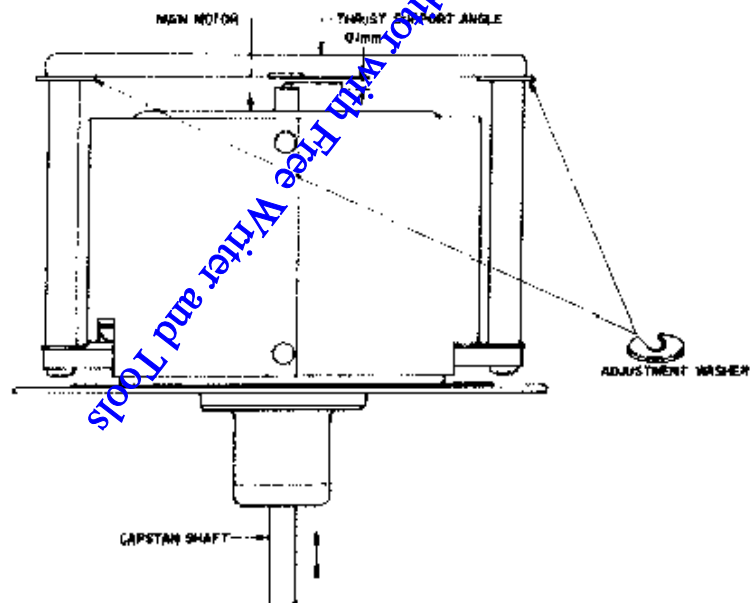


Fig. 8

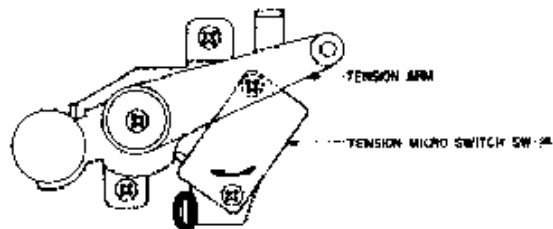


Fig. 9

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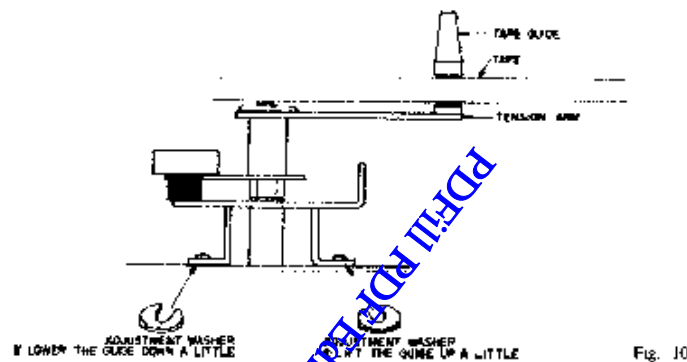


Fig. 10

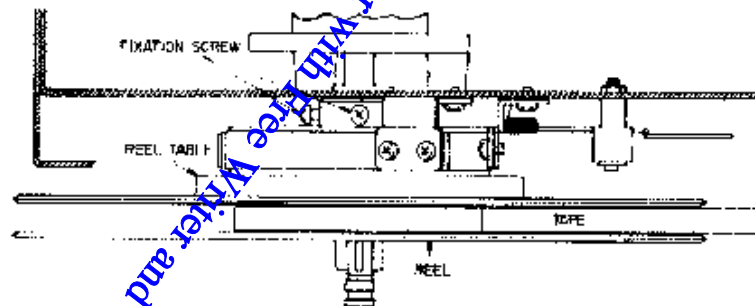


Fig. 11

15. INSTALLATION POSITION ADJUSTMENT OF HEAD SWITCH SW-3 (Refer to Figs. 7 and 12)

Adjust Head Switch installation position so that when the deck is set to reverse mode, the head switch which is mounted on the head block switches to the reverse side and that the reverse slide trips at about 0.5 mm.

16. CAPSTAN SHAFT LOOSE PLAY ADJUSTMENT (Refer to Fig. 8)

Adjust to obtain a clearance of about 0.1 mm between the capstan shaft and thrust support angle.

17. OPERATING POSITION ADJUSTMENT OF TENSION MICROSWITCH SW-14 (Refer to Fig. 9)

Adjust Tension Microswitch position so that when the Tension Arm drops, the microswitch operates perfectly to effect stop mode.

18. TAPE GUIDE HEIGHT ADJUSTMENT (Refer to Fig. 10)

- 1) Adjust Tape Guide height so that the tape does not curl between tape guides on Head Base.
- 2) In case the tape guide is low, adjust by inserting a U Type Washer on the right side in Fig. 10, and in case it is high, adjust by inserting a washer on the left side.

19. REEL TABLE HEIGHT ADJUSTMENT (Refer to Fig. 11)

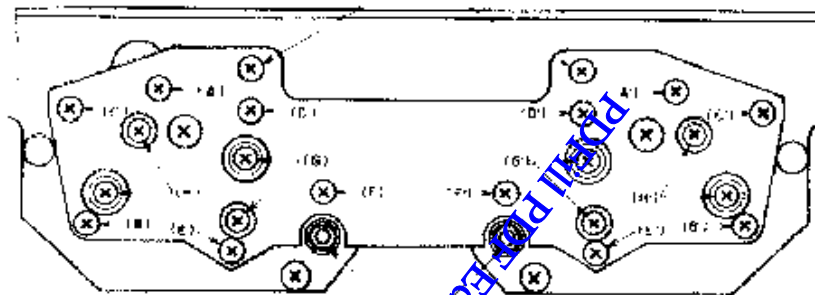
- 1) Load a tape and set the deck to FWD and REW modes. Adjust Reel Table height so that the tape winds on the center of the reels at both ends.
- 2) Tape should wind on center of reel regardless of type of reel used.

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V. HEAD ADJUSTMENT

4E AD SWITCH - YATION 9:12 AM



TAPE GUIDE HEIGHT ADJUSTMENT NUT

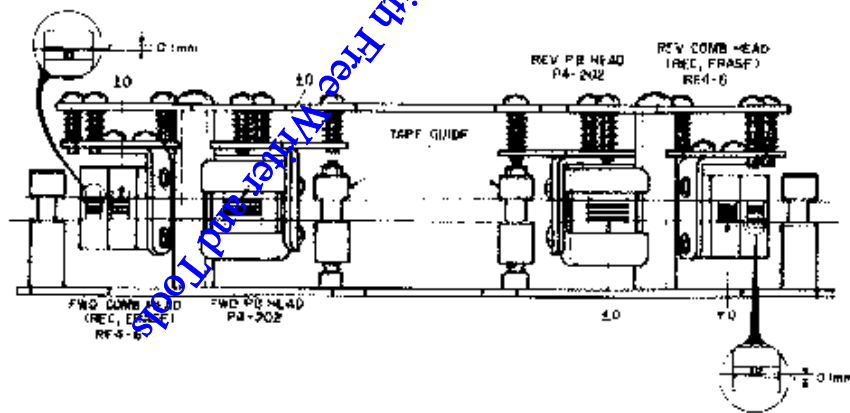


Fig. 12

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Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Remarks
1	Tape Guide Height Adjustment	Optional	FWD	Tape Guide Height Adjustment Nut	1) Adjust so that tape travels smoothly and does not wobble. 2) Do not thread tape over tension arm.
2	LWD Comb Head Height Adjustment	Optional	FWD	(A) RHC	Upper edges of channel 1 head core and tape are the same height.
3	FWD Playback Head Height Adjustment	Optional	FWD	(B) RHC	Upper edges of channel 1 head core and tape are the same height.
4	FWD Playback Head Azimuth Alignment Adjustment	5,000 Hz 3/3 1/4 ips Test Tape	FWD	(F)	Maximum output, both channels.
5	FWD Playback Head Gap Alignment Adjustment	8,000 Hz 3/3 1/4 ips Test Tape	FWD	(G)	Adjust head gap surface so that there is no change in output level when tension is applied to the supply reel side.
6	FWD Comb Head Azimuth Alignment Adjustment	Scotch #211 Tape, 15,000 Hz - 20 dBm	RVC	(C)	Maximum output, both channels.
7	FWD Comb Head Gap Alignment Adjustment	Scotch #211 Tape, 15,000 Hz - 20 dBm	RVC	(H)	Adjust head gap surface so that there is no change in output level when tension is applied to the supply reel side.

Chart 1

- NOTES:
- 1) As perfect head adjustments are vital to tape deck performance, be sure that these adjustments are carried out properly.
 - 2) Be careful not to use a magnetized driver or other magnetized tools in the vicinity of the heads.
 - 3) Use only new tape as level variation is likely to occur when using old tape.
 - 4) Demagnetize heads with head demagnetizer before and after head adjustment.
 - 5) Set tape speed to 7-1/2 ips except in steps 6 and 7.
 - 6) Adjustments outlined in Chart 1 are only for FWD side heads. However, adjustments for RVC side heads are exactly the same.

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VI. AMPLIFIER SYSTEM ADJUSTMENT

1. DC POWER SUPPLY VOLTAGE ADJUSTMENT (Refer to Fig. 13)



Fig. 13

2. TAPE SPEED ADJUSTMENT (Refer to Fig. 14)

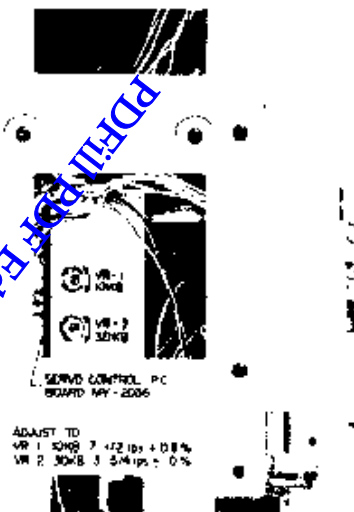


Fig. 14

3. RECORDING AND PLAYBACK AMPLIFIER ADJUSTMENT (Refer to Fig. 15)

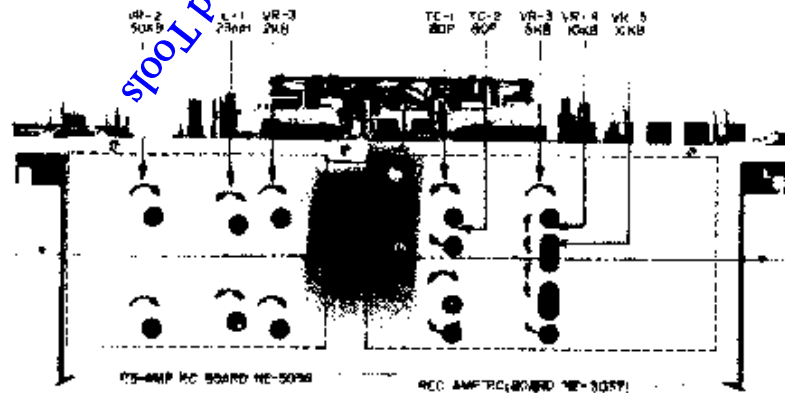


Fig. 15

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Step	Adjustment Item	Test Tape Supply Model	Mode	Adjustment Point	Result	Remarks
1	Playback Level Adjustment	700 Hz \pm 1/2 ips 0 VU Test Tape	FWD	VR-2 50 kHz	0 \pm 1.0 dB (0.775V)	Medium: -4.5 dB at Reserve mode
2	VE Meter Sensitivity Adjustment	700 Hz \pm 1/2 ips 0 VU Test Tape	FWD	VR-3 2 kHz	1 VU*	
3	Monitor Level Adjustment	1,000 Hz -20 dBm	STOP	VR-5 5 kHz	0.48m (0 VU)	Use RTD. Volume maximum. Monitor Switch "SOURCE"
4	FWD Recording Level Adjustment	Scotch #211 Tape 1,000 Hz 0 VU recording	FWD RPL	VR-6 20 kHz	0 \pm 1.5 dB (0.775V)	Monitor Switch "TAPE"
5	REV Recording Level Adjustment	Scotch #211 Tape 1,000 Hz 0 VU recording	REV RPL	VR-4 20 kHz	0 \pm 1.5 dB (0.775V)	Monitor Switch "TAPE"
6	FWD Frequency Response Adjustment	Scotch #211 Tape 1,000 Hz -10,000 Hz -20 VU recording	FWD- RPL	PC-2 R0P	1,000 Hz, 10,000 Hz flat	Tape Speed: 1.5 \times 1.5 Reserve Recording level
7	REV Frequency Response Adjustment	Scotch #211 Tape 1,000 Hz -10,000 Hz -20 VU recording	REV RPL	H-4 R0P	1,000 Hz, 10,000 Hz flat	Tape Speed: 1.5 \times 1.5 Reserve Recording level
8	Bias Leak Adjustment		REV	L-1 20 mH	Less than -10 dB	

Chart 2

- NOTES: 1) Set tape speed to 1 1/2 ips except in Steps 6 and 7.
 2) Tape Selection at "TOW NOISE"
 3) Monitor Switch at "TAPE" except in Step 3.
 4) Output Volume at maximum.
 5) New test tape should be used.
 6) Adjustment of step 8 made from the face side of Playback Amp P.C. Board.
 7) The letter b following an adjustment part number indicates "Right Channel".

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VII. DC RESISTANCE OF VARIOUS COILS

Part	Designation	DC Resistance
Main Motor	SCM124K1	Between BL-GRTD: 100 ohm Between YLW-GRN: 150 ohm Pickup Coil: 635 ohm
Reel Motor	21X03MR	Between BL-LU-RED: 74 ohm Between YLW-GRN: 1,660 ohm
Pinch Wheel Solenoid	1660 P1H13	700 ohm
Brake Solenoid	1240 P1H1	500 ohm
Reverse Solenoid	1240 P1H1	370 ohm $\pm 10\%$
Reverse Rotas	MY44-13-AMS-1874V	650 ohm
Headphone Output Transformer	TA-5355	Primary: 565 ohm $\pm 15\%$ Secondary: 0.95 ohm $\pm 15\%$
Oscillator Coil	OT-204	Between 1-3: 0.3 ohm Between 4-6: 0.7 ohm Between 7-9: 8.2 ohm
Playback Head	P4-202	208 ohm
Recording/Erase Combination Head	HP-4.6	Recording: 5.5 ohm Erase: 1.8 ohm

Chart 3

NOTE: The resistance values shown in this chart are average values.

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VIII. CLASSIFICATION OF VARIOUS P.C BOARDS

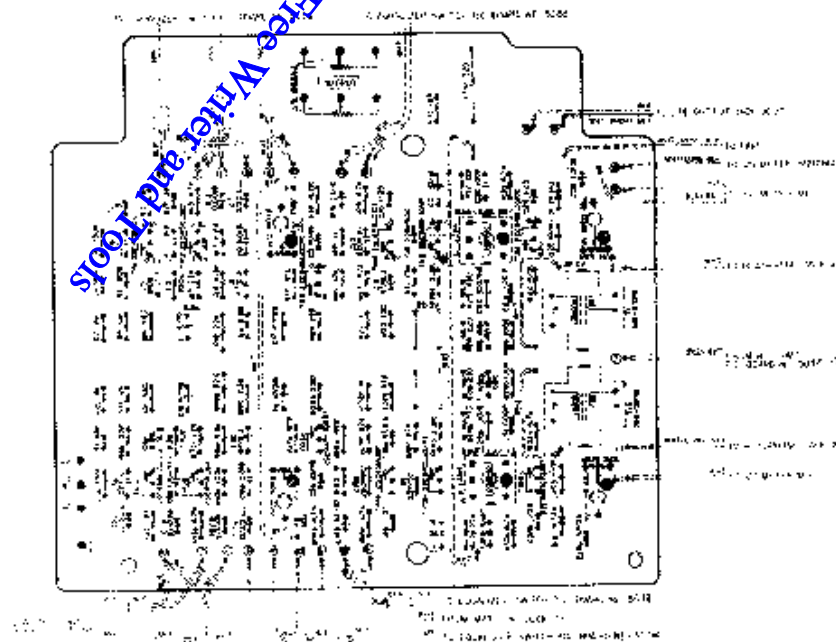
1. RELATION OF P.C BOARD TITLE AND NUMBER

P.C Board Title	P.C Board Number
Resistor P.C Board	NE-1046
Direction Indicator Lamp P.C Board	NE-1047
Power Supply P.C Board	NE-1048
SA P.C Board	NE-2034
Playback Amp P.C Board	NE-5036
Recording Amp P.C Board	NE-5037
Equalizer Switch P.C Board	NE-5038
Servo Control P.C Board	MY-2036
Transistor P.C Board	MY-2034

Chart 4

2. COMPOSITION OF VARIOUS P.C BOARDS

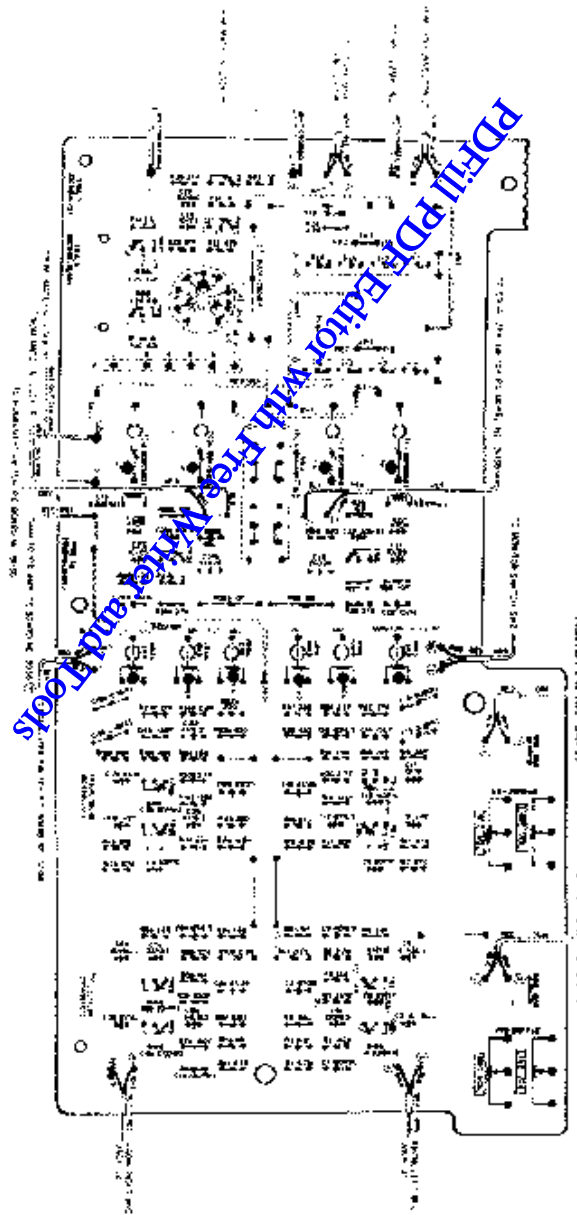
1) P.B AMP P.C BOARD (NE-5036)



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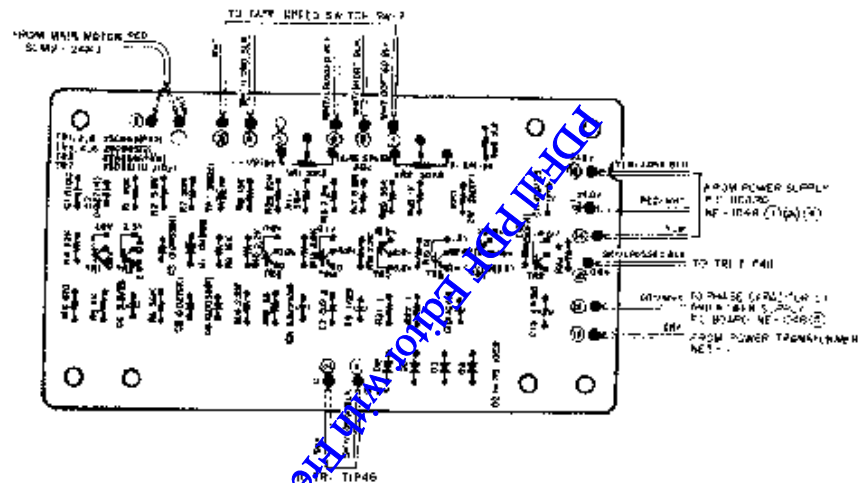
2) REC AMP PCB BOARD (NE-5037)



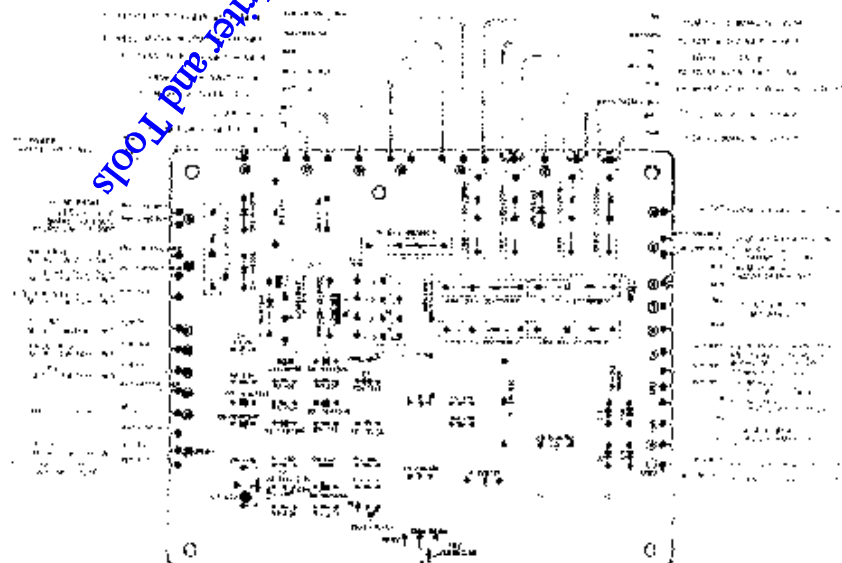
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3) SERVO CONTROL P.C BOARD (MY-2036)



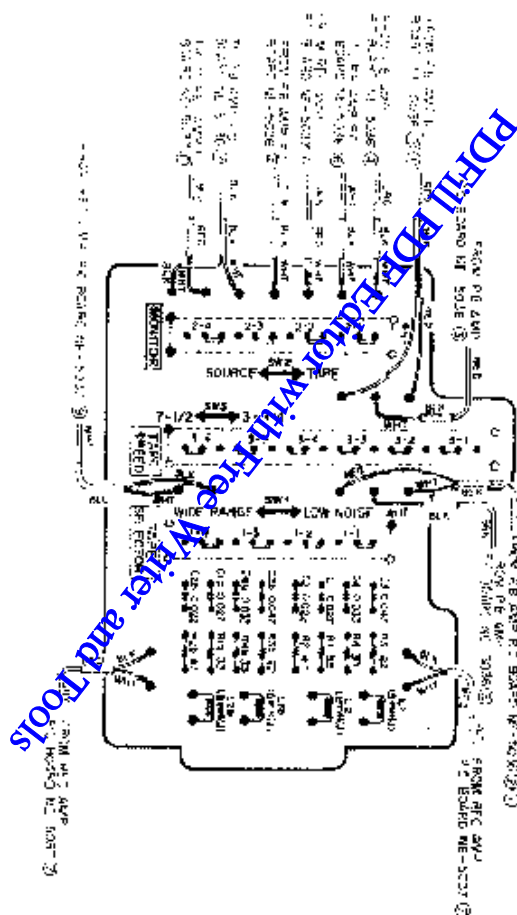
4) POWER SUPPLY P.C BOARD (SE-1048)



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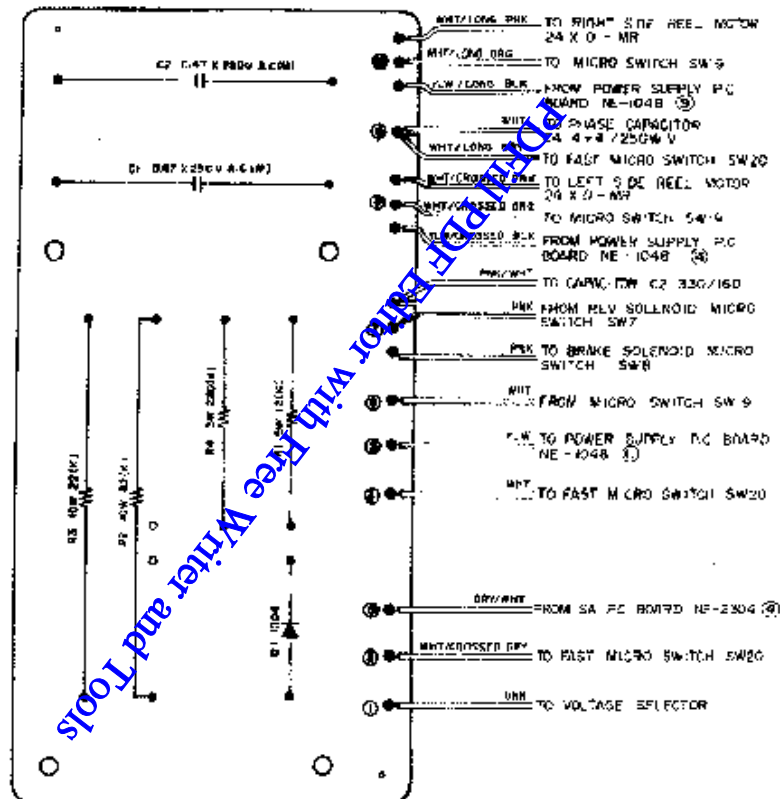
51. FQI: AITZUR SWATCH PUERTO RICO, INC. 50,064



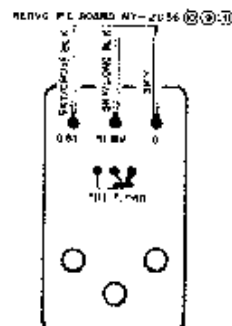
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6) RESISTOR P.C BOARD (NE-1046)



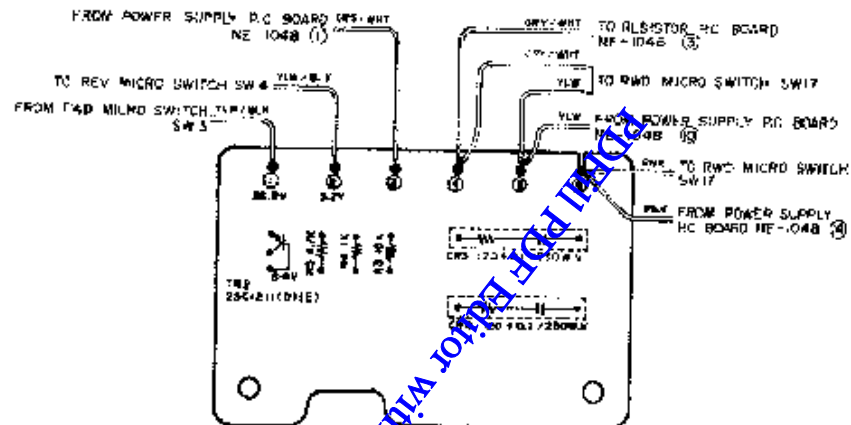
7) TRANSISTOR P.C BOARD (MY-2054)



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84. SA P C HEARD (N): 20.514



4) DIRECTION INDICATOR LAMP P.C BOARD (NE-1017)

